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# USAID ENERGY POLICY PROGRAM

## MONTHLY REPORT APRIL 2011 REHABILITATION OF TARBELA HYDROPOWER PLANT

USAID: TARBELA FIXED AMOUNT REIMBURSEMENT AGREEMENT  
NO. 391-TDR-FARA-002-00

**April 2011**

*This program is made possible by the support of the American people through the United States Agency for International Development (USAID)*

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# CONTENTS

1.	SUMMARY .....	4
2.	PROGRESS ON MONITORING AND SUPPORT.....	5
3.	CRITICAL ISSUES AND USAID/AEAI SUPPORT REQUIRED.....	6
4.	ACTION ITEMS FOR NEXT MONTH .....	7
5.	BASELINE GENERATION DATA FOR UNITS 4, 1 and 3.....	7

## 1. SUMMARY

The report presents progress on monitoring and support for Tarbela Rehabilitation program for the month of April 2011. Overall there were no delays in the generator windings and winding of unit # 4 and 1 has arrived at site. The vendor notified a Force Majeure event in March due to recent earth quake in Japan, but it will not impact the FARA schedule and expected to arrive at Tarbela by mid May. The procurement of new digital Governors was approved by CCC and WAPDA has placed the purchase order for them. The first Winding for Unit 4 installation is in progress and the testing and commissioning is scheduled to be completed by end May 2011. The second generator winding for unit #1 arrived at Karachi port on February 5, 2011 and has arrived at site in the end March. Shop Testing and Inspection of Unit # 3 winding was carried out in Japan by a team of WAPDA Engineers and has been shipped on March 24, 2011 and will be arrived in the first week of May. Tarbela staff got necessary exemption of custom duties from Federal Board of Revenue and the Unit 1 Winding will be released by custom authorities without payment of duties.

Subsequent to the completion of all shipping documents for windings # 4, 1 and 3 and opening of separate dollar account by WAPDA, the payment of US \$ 6.66 million was verified, while US\$ 2.479917 million for winding # 3 has been verified by OFM.

During EP Experts visit to the Tarbela power station on Dec 31, 2010 baseline data for units 1, 3 and 4 was collected to assess the present generation capacity before rehabilitation and the energy gain after the rehabilitation of these units , so that the total energy gain after the completion of rehabilitation program can be determined. Based on the data collected, the estimated overall improvement in generation is expected to be 128 MW.

## 2. PROGRESS ON MONITORING AND SUPPORT

Lot no.	Description of Work	COMPLETION DATES				Remarks
		FARA	Tarbela Schedule	Last Month	Current Month	
1	Replacement of Damaged Generator Stator Windings with Class F Insulation Windings, Unit#4	May 31, 2011	May 31, 2011	May 31, 2011	May 31, 2011	The installation of Class F winding is in progress at unit # 4 .The scheduled completion is expected by end May 2011.
2	Replacement of Damaged Generator Stator Windings with Class F Insulation Windings, Unit#3	Dec 31, 2011	Dec 31, 2011	Dec 31, 2011	Dec 31, 2011	The vendor notified a Force Majeure event in start of March due to recent earth quake in Japan, but the Winding has been shipped by the vendor on March 24 and expected arrival is in the first week of May. Reimbursement Claim for US\$ 2.479917(less spares) has been sent on Mar 31, 2011 and is in process.
3	Replacement of Damaged Generator Stator Windings with Class F Insulation Windings, Unit#1	Sep 30, 2011	Nov 30, 2011	Nov 30, 2011	Sep 30, 2011	Unit # 1 winding arrived at Karachi port on Feb 5, 2011 and has arrived at Tarbela in the end March. Wapda has requested shutdown to start dismantling of existing winding.
4	Upgrading of the SCADA System, Units 1-14	Dec 31, 2011	Dec 31, 2011	Dec 31, 2011	Completion is expected as per FARA schedule. Dec 31, 2011	WAPDA placed purchase order for the SCADA system.
5	Spare Seals & Guides for Relief and Bypass Valves on Turbine Side, Units 1-10	Oct 01, 2011	Dec 15, 2011	Dec 15, 2011	Completion is planned by Dec 15, 2011	Purchase Order issued on Nov 24, 2010 for supply of seals.
6	Replacement of Electromechanical Governors by Digital Ones, Unit 1-10	Dec 15, 2011	Dec 15, 2011	Dec 15, 2011	Completion is expected as per FARA schedule. Dec 15, 2011	WAPDA placed purchase order for the Governors.
7	Replacement of Worn out Station Drainage and Dewatering Pumps, Units 1-10	Dec 15, 2011	Dec 15, 2011	Dec 15, 2011	Completion is expected as per FARA schedule. Dec 15, 2011	Purchase Order for the pumps issued by WAPDA.
8	Training	Dec 15, 2011	Dec 15, 2011	Dec 15, 2011	Completion is expected as per FARA schedule. Dec 15, 2011	Tarbela / WAPDA Staff is finalizing the issuance of Purchase Order.

### 3. CRITICAL ISSUES AND USAID/AEAI SUPPORT REQUIRED

Item no.	Critical Issues	Status/Resolution	USAID/AEAI Support
1	WAPDA needs to acquire a Clearance Certificate from Federal Board of Revenue (FBR) for exemption of taxes and customs duties on procurement of all equipment under FARA.	Federal Board of Revenue (FBR) approved WAPDA request for custom duties exemption for the import of all equipment under FARA.	No further action/ support required from USAID/ AEAI.
2	Shutdown of Tarbela Units for installation of equipment under FARA. This is the most critical issue which could possibly cause delays.	Tarbela has an annual scheduled unit shutdown during six low water months (Nov till Apr) for annual maintenance of equipment. However, shutdown would be required in high water season when the demand is also at its peak (May – Oct) to meet the FARA timelines. WAPDA/Tarbela has already made a formal request to National Power Control Centre (NPCC) along with a shutdown plan, Unit # 4 shutdown was approved from Nov 22, 2010 and installation of class F winding is progressing satisfactorily.	AEAI is providing support to WAPDA / Tarbela Staff in order to optimize the schedule making best use of time and resources for meeting the FARA timelines.
3	In order to expedite the FARA schedule, WAPDA/Tarbela Power Station would require additional staff during the replacement of windings for Units 1 and 3.	Tarbela Chief Engineer has already made a formal request to the offices of Chief Engineers' Mangla, Ghazi Barotha and Warsak hydro-power stations.	On request of AEAI/USAID, WAPDA authorities have agreed to expedite the FARA schedule by adding temporary staff from Mangla, Ghazi Barotha and Warsak hydro-power stations.

#### **4. ACTION ITEMS FOR NEXT MONTH**

- I. Plan for unit # 1 shutdown to start dismantling and installation of class F windings.
- II. As Unit # 3 windings were shipped without spares, So place PO again for these spares.

#### **5. BASELINE GENERATION DATA FOR UNITS 4, 1 and 3**

During site visit of EP Experts on Dec 31, 2010 following generation data was recorded and is summarized below;

Unit No	Present Capacity	Capacity after Winding Replacement	Overall Improvement
4	87 MW	195 MW	108 MW
1	185 MW	195 MW	10 MW
3	185 MW	195 MW	10 MW

Overall Improvement in Generation: 128 MW

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